



TITLE OF INVENTION

MULTI-STAGE DRY VACUUM PUMP FOR HIGH VACUUM APPLICATIONS

ABSTRACT

This present invention provides for an improved and updated design of Nikola Tesla's High Vacuum Pump design adapted from his fluid propulsion Patent # 1.061.142, May 6, 1913 and Turbine Patent # 1.061.206, May 6, 1913, to be used specifically for the Semiconductor, Aerospace, Automotive, Healthcare & Pharmaceutical, and Food Preparation, Industries. The new design incorporates the same basic principles as Tesla's however there are many improvements as to airflow design through the pumping chambers coupled with the use of new and better materials, better metals as well as some composites, along with coatings such as Teflon etc to minimize internal corrosion on the exposed surfaces due to varied processes within these industries some of which are highly corrosive. The new improvements also include variable speed motor controls allowing integrated systems to control the speed and relative pressures of the pumps performance. Varied number of stages can be incorporated as to the required base pressure needed for different applications.

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REFERENCES CITED

U.S. Patent Documents

1531607	March 1925	Green	418/9
4828467	May 1989	Brown	418/270
5356275	October 1994	Brenner, et al	418/9
6123526	September 2000	Chen et al	418/9
4218176	August 1980	Gawne	415/90
6135708	October 2000	Conrad et al	415/90
6174127	January 2001	Conrad et al	415/1, 415/90
6183641	February 2001	Conrad et al	210/512.3, 55/345, 55/403,

			55/406, 55/45901, 209/12.1, 209/715, 209/725, 210/304, 210/360.1, 210/380.1 415/90
6224325	May 2001	Conrad et al	415/90, 415/914
6238177	May 2001	Conrad et al	415/1, 415/90, 416/198R
6261052	July 2001	Conrad et al	415/90
6328527	December 2001	Conrad et al	415/90, 416/175
6682077	January 2004	Letourneau	277/412, 277/409, 277/411 277/418, 277/420, 277/421
6692232	February 2004	Letourneau	416/198R, 415/90, 416/198A, 416/231B, 416/231R

Foreign Patent Documents

0 135 257	March 1985	EP.
2 088 957	June 1982	GB
3051515	March 2000	JP.

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